



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,628	02/05/2004	Matti Sallberg	TRIEP.056A	8484

20995	7590	06/15/2007
KNOBBE MARTENS OLSON & BEAR LLP		
2040 MAIN STREET		
FOURTEENTH FLOOR		
IRVINE, CA 92614		

EXAMINER	
HUMPHREY, LOUISE WANG ZHIYING	

ART UNIT	PAPER NUMBER
1648	

NOTIFICATION DATE	DELIVERY MODE
06/15/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcarter@kmob.com
eOAPilot@kmob.com

Office Action Summary

Application No.

10/773,628

Applicant(s)

SALLBERG, MATTI

Examiner

Louise Humphrey, Ph.D.

Art Unit

1648

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-70 is/are pending in the application.
- 4a) Of the above claim(s) 61-70 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/8/06
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Art Unit: 1648

DETAILED ACTION

This Office Action is in response to the amendment filed on 03 April 2007.

Claims 1-45 have been cancelled. Claims 46-70 are added. Claims 61-70 are withdrawn as they are directed to a nonelected subject matter.

Information Disclosure Statement

The information disclosure statement (IDS) filed on 08 December 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

The provisional nonstatutory double patenting rejection of claims 26-31 and 35 as being unpatentable over claims 3, 8-11, 17 and 24 of copending US Application No. 10/913,754 is withdrawn in response to Applicant's amendment to the copending Application filed on 08 March 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1648

The rejection of claims 26-31 and 35 under 35 U.S.C. §103 (a) as being obvious over Wang *et al.* (WO 99/66957) in view of Galili *et al.* (1996) is **withdrawn** in response to Applicant's amendment, which necessitates the following new rejection in replacement:

Claims 46-60 are rejected under 35 U.S.C. §103(a) as being unpatentable over WO 99/66957 in view of Wong *et al.* (1994).

The instant claims are directed to an isolated glycoconjugate peptide comprising a binding fragment for HIV gp120 of a CD4 receptor synthetically conjugated to gal $\alpha(1,3)$ gal β . Claims 55-60 further claim both types of glycosylation sites: O-linked (when conjugated to a hydroxylated amino acid) and N-linked (when conjugated by an NH₂-linkage or to the N-terminal end of a peptide) glycans.

WO 99/66957 describes artificial T helper cell epitope and derived immunogens with target antigenic site, for immunization against malaria, arteriosclerosis or human immune deficiency virus. Particularly, an artificial T helper epitope/target antigenic site peptide immunogen was designed with a sequence modified from the CDR2-1like domain of CD4 (page 38).

WO 99/66957 does not describe synthetic conjugation of the fragment of CD4 receptor to gal $\alpha(1,3)$ gal β .

Wong *et al.* describe synthetic conjugation of proteins with gal $\alpha(1,3)$ gal β (abstract and page 845, 1st paragraph) to make N-linked glycans as well as O-linked glycans (the paragraph bridging page 843 and 844).

Wong *et al.* do not specifically suggest glycosylation of CD4 fragments.

Ashford *et al.* suggest that glycosylation of CD4 fragments is structurally and functionally important (abstract and page 3260, right column, second full paragraph). Ashford *et al.* also disclose that, in species that do not express the gal $\alpha(1,3)$ gal β epitope, their sera contain a potent naturally occurring antibody directed toward the α -galactosyl group and suggest that such a therapeutic glycoprotein has important immunological implications (last paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fragment of CD4 receptor of Wang by glycosylation with gal $\alpha(1,3)$ gal β so as to produce O-linked and N-linked glycopeptides, as suggested by Wong *et al.* The skilled artisan would have been motivated to do so to improve the cellular transport, immunogenicity and circulatory half-life of the CD4-ligand, as taught by Wong *et al.* (1st ¶) and Ashford *et al.* There would have been a reasonable expectation of success, given that the natural form of a CD4 receptor contains glycosylation sites at two asparagine residues, as taught by Ashford *et al.*, and given the various approaches for synthetic glycosylation of proteins as discussed by Wong *et al.*

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 1648

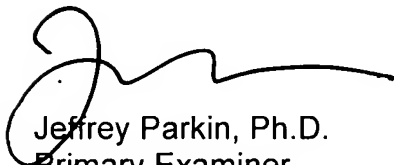
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louise Humphrey, Ph.D. whose telephone number is 571-272-5543. The examiner can normally be reached on Mon-Fri, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell, can be reached at 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Jeffrey Parkin, Ph.D.
Primary Examiner
09 June 2007



Louise Humphrey, Ph.D.
Assistant Examiner